

**Louisiana Department of Environmental Quality (LDEQ)  
Office of Environmental Services**

**STATEMENT OF BASIS**

**Acrylamide (AMD) Unit  
Kemira Water Solution, Inc.  
Waggaman, Jefferson Parish, Louisiana  
Agency Interest Number: 146892  
Activity Number: PER20080001  
Draft Permit 2107-V1**

**I. APPLICANT:**

**Company:**

Kemira Water Solutions, Inc.  
10800 River Road  
Westwego, LA 70094

**Facility:**

Acrylamide (AMD) Unit  
10800 River Road, Waggaman, LA  
Approximate UTM coordinates are 763.35 kilometers East and 3316.93  
kilometers North, Zone 15  
SIC Code: 2869

**II. FACILITY AND CURRENT PERMIT STATUS:**

Acrylamide (AMD) is produced by the liquid phase hydration of acrylonitrile (AN) in the presence of a palletized, reduced copper catalyst at a reaction temperature of 85 – 120°C and a pressure of 60 to 120 psig. Under normal operating conditions, more than 99.5% of the AN is converted to AMD. Reaction byproducts include acrylic acid and ammonia. These byproducts are not separated from the final product. The capacity is 90 million pounds per year of AMD in a 50% aqueous solution.

Kemira Water Solutions, Acrylamide Unit (AMD) Unit is a designated Part 70 source. Several Part 70 permits have been issued to the operating units within the [complex]. These include:

Permit No.	Unit or Source	Date Issued
None	-	-

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### **III. PROPOSED PERMIT / PROJECT INFORMATION:**

#### **Proposed Permit**

A permit application and Emission Inventory Questionnaire were submitted by Kemira Water Solutions, Inc. on February 6, 2008, requesting a Part 70 operating permit renewal/modification.

#### **Project Description**

The proposed modification of the AMD Unit is to take the flare out of service which follows the plant scrubber (under emission point number 19-79 and EQT001). It has become clear that the flare had such a small amount of VOC to abate that continued operation make no environmental sense. The plant scrubber will stay in service and remain same emission point number 19-79 and EQT0001. The products of combustion being generated far out weighted any gain from reducing emissions.

#### **Permitted Air Emissions**

Estimated emissions in tons per year are as follows:

<u>Pollutant</u>	<u>Before</u>	<u>After</u>	<u>Change</u>
PM <sub>10</sub>	-	-	-
SO <sub>2</sub>	0.01	-	- 0.01
NO <sub>x</sub>	0.77	-	- 0.77
CO	3.74	-	- 3.74
VOC *	4.06	3.67	- 0.39

#### **\*VOC LAC 33:III Chapter 51 Toxic Air Pollutants (TAPs):**

<u>Pollutant</u>	<u>Emissions</u>
Acrylamide	2.54
Acrylonitrile	1.71
Ethylene Glycol	0.66
Total	4.91
Other VOC (TPY):	0.01
Non-VOC (TPY)	
Ammonia	0.87
Copper (and Compounds)	<0.001

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**Regulatory Analysis**

This permit was reviewed for compliance with the Louisiana Part 70 operating permit program, Louisiana Air Quality Regulations, New Source Performance Standards (NSPS), and NESHAP. Prevention of Significant Deterioration does not apply.

**Louisiana Air Quality Regulations and NSPS**

The applicability of the appropriate regulations is straightforward and provided in the Facility Specific Requirements Section of the draft permit, or Table 2 of the Air Permit Briefing Sheet. Similarly, the Monitoring, Reporting and Recordkeeping necessary to demonstrate compliance with the applicable terms, conditions and standards are provided in the Facility Specific Requirements Section of the draft permit, or explained in Table 2 of the Air Permit Briefing Sheet.

**Prevention of Significant Deterioration Applicability**

The Acrylamide (AMD) Unit is an existing facility. There is no physical change or change in the method of operation per LAC 33:III.509.B.Major Modification.c.iv. Therefore, the PSD analysis is not required.

**MACT Requirements**

The Acrylamide Unit is a major source of toxic air pollutants as defined in LAC 33:III.Chapter 51. Therefore, Maximum Achievable Control Technology (MACT) is applicable.

**Air Modeling Analysis**

Impact on air quality from the emissions of the proposed unit will be below the National Ambient Air Quality Standards (NAAQS) and the Louisiana Ambient Air Standards (AAS) beyond industrial property.

**General Condition XVII Activities**

The facility will comply with the applicable General Condition XVII Activities emissions as required by the operating permit rule. However, General Condition XVII Activities are not subject to testing, monitoring, reporting or recordkeeping requirements. For a list of approved General Condition XVII Activities, refer to Section VIII of the draft Part 70 permit.

**Insignificant Activities**

All Insignificant Activities are authorized under LAC 33:III.501.B.5. For a list of approved Insignificant Activities, refer to Section IX of the draft Part 70 permit.

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**IV. Permit Shields**

A permit shield was not requested.

**V. Periodic Monitoring**

The Monitoring, Reporting and Recordkeeping necessary to demonstrate compliance with the applicable terms, conditions and standards are provided in Table 3 of the proposed permit.

**VI. Applicability and Exemptions of Selected Subject Items<sup>1</sup>**

ID No:	Requirement	Notes
-	See Table X and XI	

**VII. Streamlined Requirements**

Unit or Plant Site	Programs Being Streamlined	Stream Applicability	Overall Most Stringent Program
Acrylamide Unit	40 CFR 63 Subpart H	Streams containing 5% VOHAP  Streams containing 10% VOC  Streams containing 10% Ammonia	40 CFR 63 Subpart H
	40 CFR 60 Subpart VV		
	LAC 33:III.2121		
	LAC 33:III.5109		
	RCRA BB		

<sup>1</sup> This table will be finished with other complex applicability determinations or exemptions.

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## **VIII. Glossary**

**Best Available Control Technologies (BACT)** - An emissions limitation (including a visible emission standard) based on the maximum degree of reduction for each pollutant subject to regulation under this part which would be emitted from any proposed major stationary source or major modification which the administrative authority, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant.

**Carbon Monoxide (CO)** – A colorless, odorless gas which is an oxide of carbon.

**Grandfathered Status**- Those facilities that were under actual construction or operation as of June 19, 1969, the signature date of the original Clean Air Act. These facilities are not required to obtain a permit. Facilities that are subject to Part 70 (Title V) requirements lose grandfathered status and must apply for a permit.

**Hydrogen Disulfide (H<sub>2</sub>S)** - A colorless inflammable gas having the characteristic odor of rotten eggs, and found in many mineral springs. It is produced by the action of acids on metallic sulfides, and is an important chemical reagent.

**Maximum Achievable Control Technology (MACT)** - The maximum degree of reduction in emissions of each air pollutant subject to LAC 33:III.Chapter 51 (including a prohibition on such emissions, where achievable) that the administrative authority, upon review of submitted MACT compliance plans and other relevant information and taking into consideration the cost of achieving such emission reduction, as well as any non-air-quality health and environmental impacts and energy requirements, determines is achievable through application of measures, processes, methods, systems, or techniques.

**New Source Review (NSR)** - A preconstruction review and permitting program applicable to new or modified major stationary sources of air pollutants regulated under the Clean Air Act (CAA). NSR is required by Parts C ("Prevention of Significant Deterioration of Air Quality") and D ("Nonattainment New Source Review").

**Nitrogen Oxides (NO<sub>x</sub>)** - Compounds whose molecules consists of nitrogen and oxygen.

**National Emission Standards for Hazardous Air Pollutants (NESHAP)** – Toxic air emission standards for specific types of facilities, as outlined in 40 CFR Parts 61 through 63.

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Nonattainment New Source Review (NNSR) - A New Source Review permitting program for major sources in geographic areas that do not meet the National Ambient Air Quality Standards (NAAQS) at 40 CFR Part 50. Nonattainment NSR is designed to ensure that emissions associated with new or modified sources will be regulated with the goal of improving ambient air quality.

Organic Compound - Any compound of carbon and another element. Examples: Methane (CH<sub>4</sub>), Ethane (C<sub>2</sub>H<sub>6</sub>), Carbon Disulfide (CS<sub>2</sub>)

Part 70 Operating Permit- Also referred to as a Title V permit, required for major sources as defined in 40 CFR 70 and LAC 33:III.507. Major sources include, but are not limited to, sources which have the potential to emit:  $\geq 10$  tons per year of any toxic air pollutant;  $\geq 25$  tons of total toxic air pollutants; and  $\geq 100$  tons per year of regulated pollutants (unless regulated solely under 112(r) of the Clean Air Act) (25 tons per year for sources in non-attainment parishes).

PM<sub>10</sub>- Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by the method in Title 40, Code of Federal Regulations, Part 50, Appendix J.

Potential to Emit (PTE) - The maximum capacity of a stationary source to emit any air pollutant under its physical and operational design.

Prevention of Significant Deterioration (PSD) - A New Source Review permitting program for major sources in geographic areas that meet the National Ambient Air Quality Standards (NAAQS) at 40 CFR Part 50. PSD requirements are designed to ensure that the air quality in attainment areas will not degrade.

Synthetic Organic Chemical Manufacturing Industry (SOCMI) - any facility that is subject to 40 CFR part 60, subpart III, NNN, or RRR or the Hazardous Organic NESHAP (HON); or a facility that would have been subject to subpart III, NNN, or RRR had construction of the regulated source commenced after the applicability date of one of these rules.

Sulfur Dioxide (SO<sub>2</sub>) - An oxide of sulphur.

Title V permit - See Part 70 Operating Permit.

Volatile Organic Compound (VOC) - Any organic compound which participates in atmospheric photochemical reactions; that is, any organic compound other than those which the administrator of the U.S. Environmental Protection Agency designates as having negligible photochemical reactivity.

**BOBBY JINDAL**  
GOVERNOR



**HAROLD LEGGETT, PH.D.**  
SECRETARY

**State of Louisiana**  
**DEPARTMENT OF ENVIRONMENTAL QUALITY**  
**ENVIRONMENTAL SERVICES**

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**MAR 04 2008**

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Mr. Joseph Boroden  
Kemira Water Solution, Inc.  
P.O. Box 1924  
Mobile, AL 36633

**RE: Acrylamide Plant**  
**Administrative Completeness Determination**

Dear Mr. Boroden:

The Office of Environmental Services received your application for a regular Title V air permit renewal on March 4, 2008. As of the date of this letter, the application, along with any additional information submitted to date, has been determined to be administratively complete and has been assigned to the Petrochemical Section, Group 1. Please note that the Department may require additional information if technical deficiencies are found at a later date.

If you have any questions, please call me at (225) 219-3286. Thank you for your attention to this matter.

Sincerely,

A handwritten signature in black ink, appearing to read "Jerri Muller".

Jerri Muller  
Environmental Project Specialist  
Permit Application Administrative Review Group

c: IO-A